

41. (New) A thin-film solar cell according to Claim 33, further comprising a blocking layer disposed between the metallic layer and said at least one refractive layer.

42. (New) A thin-film solar-cell according to Claim 35, wherein the anti-reflective layer comprises a layer of refractive oxide covered by a layer of nitride.

43. (New) A thin-film solar cell according to Claim 33, wherein the absorber layer comprises a CIS structure.

44. (New) A thin-film solar cell according to Claim 33, wherein the metallic layer is disposed between two refractive layers having a thickness of about 30 to about 50 nm.

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claim 15-44 are pending in the present application. Claims 15-17 and 19-28 have been amended, and Claims 29-44 have been added by the present amendment.

In the outstanding Office Action, the Information Disclosure Statement was objected to; the specification was objected to; Claims 16, 18 and 26 were rejected under 35 U.S.C. § 112, first paragraph; Claims 15-28 were rejected under 35 U.S.C. § 112, second paragraph; Claims 15-20, 22, 24-26 and 28 were rejected under 35 U.S.C. § 103(a) as unpatentable over Weber et al in view of Chen et al; Claims 21 and 27 were rejected under 35 U.S.C. § 103(a) as unpatentable over Weber et al in view of Chen et al and Nath et al; and Claim 23 was rejected under 35 U.S.C. § 103(a) as unpatentable over Weber et al in view of Chen et al and Yamazaki.

Regarding the objection to the IDS, the outstanding Office Action indicates the relevance of EP 0252489 has not been supplied. Applicants note that EP 0252489 is listed in

the corresponding International Search Report and its relevance is indicated as category "A" document defining the general state of the art which is not considered to be of particular relevance. Accordingly, it is respectfully requested this objection be withdrawn.

Further, the specification has been amended to include headings, to not include reference to the claims, and to correct minor informalities. Accordingly, it is respectfully requested the objection to the specification be withdrawn.

Regarding the rejection of Claims 16, 18 and 26 under 35 U.S.C. § 112, first paragraph and the rejection of Claims 15-28 under 35 U.S.C. § 112, second paragraph, the appropriate claims have been amended in light of the comments noted in the outstanding Office Action, and as shown in the marked-up copy. Accordingly, it is respectfully requested these rejections be withdrawn.

Claims 15-20, 22, 24-26 and 28 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Weber et al in view of Chen et al. This rejection is respectfully traversed.

Claim 15 is directed to a thin-film solar cell including an absorber layer and at least one transparent window electrode disposed on a side on which light is incident. The window electrode includes at least a first metallic layer and at least one antireflective layer deposited on the side on which light is incident, situated opposite to the absorber layer. Also included is at least one first refractive dielectric oxide or nitride layer between the absorber layer and the metallic layer of the window electrode. Independent Claim 24 includes similar features.

Accordingly, a thin film of a metal such as silver, sandwiched between two refractive films of oxide and/or nitride, even made of dielectric materials is effective as a front (or top) electrode for a solar cell when combined with an absorber layer. The electrode can thus be manufactured at a low cost, with a significantly reduced thickness as compared with electrodes including transparent conductive oxides.

The outstanding Office Action indicates Weber et al teach the claimed invention. However, Applicants note the system described in Weber et al involves interposing a metallic conductive layer between a first light transmitting electrically conductive layer and a second light transmitting layer dissimilar in optical thickness. In fact, a light transmitting electrically conductive material is also used for the second layer. The first (inner) light transmitting layer is thicker than the second (outer) layer with a first geometrical thickness of about 90 to about 115 nm and a second geometrical thickness of about 10 to about 50 nm (see column 5, lines 55-61).

The claimed invention differs from Weber et al at least because the present invention includes a dielectric oxide or dielectric nitride as a light transmitting layer and includes a stack of thin films where the light transmitting layer located between the absorber layer and the silver layer is as thin as about 30 to 50 nm.

Accordingly, it is respectfully submitted independent Claims 15 and 24 and each of the claims depending therefrom are allowable.

Claims 21 and 27 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Weber et al in view of Chen et al and Nath et al. This rejection is respectfully traversed.

Claims 21 and 27 depend on independent Claims 15 and 24, respectively, which as discussed above are believed to be allowable. Further, it is respectfully submitted Nath et al also do not teach or suggest the claimed succession of layers. Accordingly, it is respectfully requested this rejection also be withdrawn.

Claim 23 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Weber et al in view of Chen et al and Yamazaki. This rejection is respectfully traversed.

Again, Claim 23 depends on independent Claim 15, which as discussed above is believed to be allowable. Further, it is respectfully submitted Yamazaki does not teach or

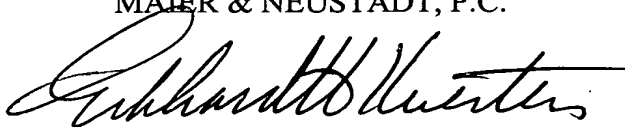
suggest the claimed succession of layers. Accordingly, it is respectfully requested this rejection also be withdrawn.

In addition, new Claims 29-44 have been added to set forth the invention, and Applicants submit the new claims are supported by the originally filed specifically. It is respectfully submitted the new claims are allowable for similar reasons as discussed above.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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